



# Project Information Document/ Identification/Concept Stage (PID)

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Concept Stage | Date Prepared/Updated: 14-May-2022 | Report No: PIDC235205



**BASIC INFORMATION**

**A. Basic Project Data**

Project ID	Parent Project ID (if any)	Environmental and Social Risk Classification	Project Name
P175523		Moderate	Financial Protection Program against Natural Disasters: Strengthening the Financial Resilience of Morocco
Region	Country	Date PID Prepared	Estimated Date of Approval
MIDDLE EAST AND NORTH AFRICA	Morocco	14-May-2022	
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	Department of Treasury	Fonds de Solidarité contre les Évènements Catastrophiques, Société Centrale de Réassurance	

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**PROJECT FINANCING DATA (US\$, Millions)**

**SUMMARY**

<b>Total Project Cost</b>	5.00
<b>Total Financing</b>	5.00
<b>Financing Gap</b>	0.00

**DETAILS**

**Non-World Bank Group Financing**

Trust Funds	5.00
Global Facility for Disaster Reduction and Recovery	5.00



## B. Introduction and Context

### Country Context

Despite enjoying a comparatively steady political and economic development trajectory in the Maghreb Region, Morocco's economic growth over the past five years has remained modest. Among other factors, the volatility of growth has been driven by the current pandemic as well as large swings in the growth of mainly rain-fed agriculture and tourism sector. Regarding poverty reduction, Morocco has made significant progress over the last decade. The percentage of the population living below the national poverty line (US\$ 2.15 per day) has fallen significantly, from 15% in 2001 to 5% in 2014. Nevertheless, 12.5 % of the population (six million people) are still vulnerable to poverty, and the urban-rural gap in poverty rates remains large. Inclusiveness and job quality also pose significant challenges, especially for youth, women, and uneducated workers. Under limited economic opportunities, recovery possibilities for vulnerable peoples if affected by adverse natural events are narrow, and the risks of slipping back into poverty are high, which could jeopardize the hard-won development gains of the past years.

### Sectoral and Institutional Context

Morocco is one of the countries most exposed to geological and climate-related hazards in the Middle East and North Africa (MENA) region. Over 30% of the Moroccan population and 33% of its GDP are at risk from two or more natural hazards. The country has an annual average loss from natural catastrophes of over US\$575 million (0.6% of GDP). Due to its geographical position, high rainfall variability, and topography, Morocco is regularly prone to flooding with estimations of over US\$400 million in losses each year. Drought is currently excluded from the national financial protection scheme.

Morocco is already bearing the brunt of climate change, with events such as the severe drought in 2016 or the recent flood events in 2020/2021. Future climate trends include: i) rising temperatures of 1–1.5°C by 2050 with a faster rate of warming in the interior of the country; ii) decrease in average precipitation by 10–20 percent across the country, with a decrease of 30 percent in the Saharan region by 2100; iii) reduced snowpack in the Atlas Mountains; iv) increased incidence of drought conditions ; and v) rise in sea levels between 20–60cm by 2100. Climate change will increase demand on groundwater for irrigation, which already consumes 90 percent of available water, and reduce the quality of surface water due to pollutants. Extreme events are expected to increase in frequency and severity with flash floods threatening urban areas, increased risk of flooding during October-December, coastal erosion and flooding from tidal storms and erratic precipitations patterns.

Climate risks constitute a significant explicit and implicit contingent liability, primarily for vulnerable populations (mainly living in low-income neighborhoods in cities where disaster risk is most important), homeowners, and small businesses. Concerns were being raised that funding for climate and disaster resilience was insufficient to meet the goals of the Paris Agreement and Sendai Framework. Since the COVID 19- pandemic, initial signals are that the funding gap will widen. Opportunities exist to harness co-benefits for pandemic recovery and climate and disaster resilience. To leverage climate and disaster resilience finance, especially during the Covid-19 response, decision-making needs to be more risk-informed and



incorporate risks from multiple threats. It also requires more significant financial assistance from the government combined with risk transfer instruments (e.g., reinsurance or Cat Bonds) for extreme events for which reserves or other budgetary instruments would be too costly or too slow to mobilize.

The proposed Program will support the Ministry of Economy and Finance (MEF) through the Department of Treasury and External Finance (DTFE) as well as Morocco's Public Solidarity Fund against Catastrophic Events (FSEC), as the primary beneficiary, to strengthen Morocco's resilience against disasters and climate shocks. FSEC is a public compensation mechanism established by Law 110-14 with the mandate to provide a financial response to uninsured, vulnerable households, and which offers partial compensation to those affected by catastrophic events. Other beneficiaries include Morocco's national reinsurer Société Centrale de Réassurance (SCR), public institutions such as the Insurance Regulation Authority (ACAPS), academic institutions specializing in risk management, and insurance professionals.

Activities covered by the current Program build on what has already been achieved by the Government of Morocco and previous World Bank technical assistance, and targets complementary and critical areas of development for greater financial resilience against disasters and shocks. These activities aim at:

- i. Improving existing **risk modeling** and developing new risk modules (e.g., pandemics, climate, compound risks)
- ii. Building **systems** for improved loss evaluation including based on better leverage of risk and loss data (e.g., satellite imagery, social/media/ground data), and enabling faster and more reliable processing of compensations after a disaster
- iii. Supporting **start-up costs** for the design, purchase and implementation of a risk transfer product (e.g., Cat Bond) to cover flood and potentially other risks (earthquakes, drought, etc.)

#### Relationship to CPF

The proposed Recipient Executed Trust-Fund Grant (the Grant) operation will contribute toward the World Bank Group's twin goals of ending extreme poverty and sustainably promoting shared prosperity, given that the poor are often affected the most by natural disasters exacerbated by the impact of climate change. The supervising recipient of the Grant will be MEF/DTFE, with FSEC being identified as the primary beneficiary and acting as an executing agency, alongside SCR. This Grant will specifically help reinforce FSEC's financial resilience by implementing a market-based risk transfer mechanism to provide quick liquidity in case of flood and potentially earthquake events. It will also lay the ground for the inclusion and the joint assessment of new risks by supporting climate risk modeling efforts and developing a multi-risk approach to assess compound risks. Finally, it will help FSEC build advanced systems for claims management (to better and more efficiently disburse relief funds to vulnerable affected populations in the aftermath of a disaster) and satellite imagery exploitation (e.g., near-real time estimation tool). These objectives are consistent with the Bank Group's Country Partnership Framework for Morocco for the period FY19–FY24 (Report No. 131039-MA) discussed by the Board of Executive Directors on January 18, 2019. In particular, it will support Strategic Focus Area C, "Promoting Inclusive and Resilient Territorial Development" and specifically CPF Objective 10,



"Strengthen Adaptation to Climate Change and Resilience to Natural Disasters and CPF Objective 11, "Improve the Efficiency of Public Spending".

The proposed operation is also aligned with the MENA Regional Strategy. The Program will contribute to strengthening social resilience by helping the Government of Morocco and FSEC more effectively respond to needs from the poor and most vulnerable. The Program will have a focus on poorer and most vulnerable communities, which are often the least prepared to deal with vulnerabilities. In addition, by furthering the redirection of Morocco's risk management from ex-post response toward an ex-ante culture of preparedness initiated in the World Bank Program-for-Results (P144539) and Cat DDO (P168580) operations, the Grant will further strengthen Morocco's proactive management of financial risks against a broader range of shocks, an approach that could be replicated under other pillars of the Regional Strategy, such as the resilience to refugee and migration shocks, or the reconstruction and recovery thematic area.

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C. Project Development Objective(s)

Proposed Development Objective(s)

The Project Development Objective is to strengthen the technical, operational and financial capacity of the Government of Morocco and the Solidarity Fund to respond to severe disasters and climate shocks, and alleviate their impact on the most vulnerable part of the population.

Key Results

Issues	Activities	Outputs	Outcomes
Existing flood models are limited, do not account for climate change and are therefore insufficient to place more elaborate risk transfer products	Stock-taking, review and improvement of existing flood risk models	An advanced flood risk model, accounting for climate change, is developed	FSEC is able to use refined information on its exposure to existing risks to efficiently engage in negotiations with international reinsurers.
Drought is currently excluded from the national financial protection scheme	Review of adequate international practices and development of a new drought model	A new elaborate drought risk model, accounting for climate change, is developed	FSEC is able to expand its coverage to new risks.  The SCR, as the national reinsurer, is able to leverage the refined understanding of different risks in Morocco to reinsure local insurers.



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FSEC has limited capacity to address reimbursement claims in the aftermath of a significant disaster	Development of a digital platform for interaction with victims based on a comprehensive claims management process and systems	A Digital platform for reimbursement claims and interaction with victims is implemented	FSEC’s ability to handle reimbursement claims and channel disbursements efficiently in the aftermath of a disaster is enhanced
FSEC is not able to assess its financing needs reliably and quickly in the aftermath of a disaster	Development/upgrade of a near real time estimation tool for FSEC to estimate financial losses and impact on populations	The FSEC’s near real-time estimation system is upgraded	FSEC’s ability to assess its disbursement needs in the aftermath of a disaster is enhanced
FSEC is only partially covered against catastrophic risk up to a limited return period, in particular for flood risk	Technical studies comparing different strategies and options for flood risk transfer under risk basis minimization	Implementation of a flood risk transfer instrument	The FSEC is able to use refined information on its exposure to existing risks to efficiently engage in negotiations with international reinsurers.

**D. Preliminary Description**

Activities/Components

The proposed grant will strengthen the preparedness and financial response to beneficiaries through advanced modeling of climate risks (specifically drought and flood) and implementation of a parametric market-based flood risk transfer solution for FSEC. Currently available risk information and models are of low-quality and insufficient to support a competitive, parametric market-based transaction (which Morocco experienced when placing the earthquake parametric reinsurance at the end of 2019). In light of the current pandemic, the proposed grant will also address a broader range of perils (multi-risk diagnostic) from a macro-level perspective, to identify the worst case potential of other complex risks and their compound effects, which are currently not modelled in Morocco. This will include but will not be limited to: health, cyber, locust, and a more comprehensive terrorism risk assessment. This is expected to directly feed into the national Disaster Risk Finance strategy document.

The project is composed of three components and builds on previous analytical work and governmental achievements (as described in the diagram below) :

**Component 1: Climate Risk Understanding and Modeling (US\$ 1.5 million)**

This component will support the flood modeling costs required to develop and validate parametric-reinsurance-transaction-ready risk information and triggers. It will also raise awareness on drought risk, in the context of highly climate-change-susceptible assets (i.e., the agriculture sector) and given the lack of



institutional capacity and understanding of potential contingent liability from climate risk. Finally, this component will support the development of a knowledge and e-learning platform involving the different DRF stakeholders to build their capacity over the long-term and leverage the knowledge sharing element of this activity.

This will focus on (i) stock-taking, review and improvement of existing flood and earthquake risk models, (ii) integration of climate change in flood risk modeling, (iii) advanced modeling of drought risk; (iv) development of new and/or upgraded risk modules to include pandemics, cyber, locust, tsunami, compound risks and a more comprehensive terrorism risk assessment. It will also allow the purchase of vulnerability and exposure maps as well as models to support the development of the different risk modules (e.g., Digital Elevation Model). In addition, a knowledge exchange between researchers, decision-makers and risk information users will be put in place through workshops, training sessions and e-learning modules to ensure information is shared and benefits from various expertise and experience and ultimately reinforces the capacity of stakeholders, academia and insurance professionals. The project will build on the existing Centre Africain des Risques Catastrophiques (CARC) to develop the public and private sector's capacity (e.g., including DTFE, FSEC, insurance regulator ACAPS, insurance federation FMSAR, as well as insurance and reinsurance markets).

Core activities will allow for an improved climate (physical) risk and vulnerability assessment (i.e., exposure, hazard, vulnerability, financial impact), the selection of parameters/indicators (e.g., flood depth/streamflow, moisture/greenness/rainfall in case of drought) and their thresholds (through iterative basis risk assessments/optimization). It will also make use of latest risk information and technology to produce advanced risk models and near real-time risk information which are expected to support in turn more competitive risk transfer products (e.g., parametric, financial market CAT-Bond against flood events) by January 2023, as per MEF/DTFE's and FSEC's objectives.

The initial stock-taking will draw on previous achievements regarding risk modeling in Morocco (e.g., in determining the requirements of Law 110-14 or the flood and earthquake reinsurance covers) and on international experience on the development of parametric flood insurance products, including that of the South East Asia Disaster Risk Insurance Facility (SEADRIF). Technical modeling aspects such as policy triggers, availability of near real time information, hybrid architecture combining hydrological and Earth-observation based techniques, and other basis risk minimization considerations will be taken into account, directly from lessons and experience of the SEADRIF project design and implementation. Beyond modeling per say, other lessons will also be leveraged in terms of efficient approach to markets, their early involvement into the trigger and policy design and structuring phases, pragmatic take to modeling that actively engages with underwriters.

This is expected to be procured from established model vendors and academics that would be considered acceptable by reinsurance markets standards. This will include domestic partners, universities and research centers whenever relevant, to develop local capacity and strengthen risk ownership over time.

## **Component 2: Systems Building (US\$ 2.0 million)**



This component will support the building of a risk information and software infrastructure to allow for near real-time impact analysis, estimation of financial losses, and response. It will also further strengthen the operationalization of Law 110-14 and the various bodies set up by the law, as initially supported by the PforR. Finally, it will contribute to faster and more reliable financial compensations in the aftermath of a disaster, for the benefit of the population affected and the most vulnerable

Activities that would be delivered under this component include:

- Acquisition of a database management system
- Establishment of a Natural Hazard web portal with free access to information
- Development of a centralized risk monitoring platform (combining all perils into an operational dashboard) targeting the most vulnerable populations of Morocco (as per FSEC's mandate).
- Development of a web enabled platform for satellite imagery processing
- Development of tools for optimal management of cat risk information and processing of data and images from social networks and online media.
- Development/ upgrade of a near real time estimation tool for FSEC to estimate financial losses and impact on populations. This tool would help provide more accurate estimates of the required response costs. Several tasks can be performed by the software application, including early warning, risk mapping, vulnerability assessment and financial planning.
- Development of a digital platform for interaction with victims based on a comprehensive claims management process and systems that address several steps of the process (e.g., warning and information sharing with victims, claims collection platform, treatment and notification, reporting; filing methods, operational fraud detection and prevention measures; loss assessment and processing; expeditious claim settlement; effective complaint and dispute settlement procedures; and appropriate supervision of claims-related services). This activity may require the development of a communication and outreach strategy for stakeholders and public at large, necessary for the full operationalization of the claim management system.
- Development of software solutions and tools to support the work of the loss evaluation committee as set up by Law 110-14

International experience (Turkey, Japan, France, United States) will extensively be used to inform on best practices that can benefit the Moroccan context.

### **Component 3: Start-up costs associated with a flood market-based risk transfer solution (US\$ 1.5 million)**

This component will support the transaction costs associated with a competitive, transparent, optimized risk transfer purchase and implementation, covering severe flood events and potentially other risks (earthquakes or droughts). It will cover communication (outreach), structuring, legal, contractual and execution costs of a placement that will aim to be widely open to quotes from a wide variety of (financially acceptable) markets. This includes a benchmark of financial vs reinsurance market parametric solutions, and a comparative analysis for basis risk minimization. It will be placed with the support of expert brokers specialized in parametric, derivate products, with experience relevant to the context of Morocco and flood products, and





to be selected through competitive process. It may make use of domestic financial capacity if cost-effective and acceptable rating-wise. It will also include comprehensive validation of the parametric model by the broker to ensure that the policy/contract captures a wide range of possible future catastrophe scenarios and that the product ultimately operates as intended (basis risk minimization, use of markets best practices and lessons learned from international experience). This is also expected to generate additional confidence from the markets in the flood program being placed.

**Environmental and Social Standards Relevance**

**E. Relevant Standards**

**ESS Standards**

**Relevance**

ESS 1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant
ESS 2	Labor and Working Conditions	Relevant
ESS 3	Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4	Community Health and Safety	Relevant
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Not Currently Relevant
ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8	Cultural Heritage	Not Currently Relevant
ESS 9	Financial Intermediaries	Not Currently Relevant

**Legal Operational Policies**

**Safeguard Policies**

**Triggered**

**Explanation (Optional)**

Projects on International Waterways OP 7.50

No

Projects in Disputed Areas OP 7.60

No

**Summary of Screening of Environmental and Social Risks and Impacts**

Environmental and social risks and impacts are expected to be moderate. It includes (i) potential exclusion from the projects benefits for the most vulnerable people including those in the poorest communities, those

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with limited access and/or understanding of technology, persons with disabilities, women and youth; (ii) labor risks and (iii) personal data breaches. Mitigating measures will be defined in the SIA.

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### Implementing Agencies

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